

Chapter 2

The Importance of People, Institutions, and Resources in Large-Scale Conservation

Susan G. Clark, Aaron M. Hohl and Catherine H. Picard

Abstract Large-scale conservation in the common interest requires that people be clear about the nature of the problems they face, the utility of the theory or assumptions they employ, and the features of the situation they try to manage. This chapter introduces ideas and language for realistically conceptualizing problems in large-scale conservation, and it presents a framework for making sense of the human as well as biophysical dimensions in natural resource management. Three types of problems are described—technical (ordinary), governance (political), and constitutive (cultural); too often in large-scale conservation governance and constitutive problems are overlooked, misconstrued, or inadequately heeded. Large-scale conservation also requires integrating information into a rational, yet practical, framework for decision making. The framework presented here to understand and carry out the integration task can be most simply stated as “humans seek values through institutions using and affecting resources.” These four vital elements of management and policy making—humans, values, institutions, and resources—all of which are open for empirical, systematic study, are described. Skillful application of this three-level problem typology and framework can enable practitioners to analyze the full suite of problems and develop realistic solutions.

Keywords Large-scale conservation · Values · Institutions · Resources · Human behavior · Technical problems · Governance problems · Constitutive problems · Framework

S. G. Clark (✉)
Yale School of Forestry and Environmental Studies,
New Haven, CT, USA
e-mail: susan.g.clark@yale.edu

A. M. Hohl
Humboldt State University,
Department of Forestry and Wildland Resources, Arcata, CA, USA
e-mail: amhohl@yahoo.com

C. H. Picard
Tetra Tech/ARD, Burlington, VT, USA
e-mail: cubpicard@yahoo.com

S. G. Clark et al. (eds.), *Large-Scale Conservation in the Common Interest*,
Springer Series on Environmental Management, DOI 10.1007/978-3-319-07419-1_2,
© Springer International Publishing Switzerland 2015

2.1 Introduction

Large-scale conservation efforts are a response to the growing awareness that many environmental problems can be understood and successfully remedied only by taking into consideration larger spatial, temporal, and social complexity scales than in the past. However, successful large-scale conservation requires more than just “scaling up” previous formulas, established organizational designs, or traditional mindsets. Problems must be addressed holistically and contextually, and attention must be given to social and decision processes inherent in the case at hand. For this to happen, practitioners require critical thinking, problem solving, observational, management, leadership, and technical skills (Clark and Wallace 2013). We are not alone in believing that practitioners, scientists, and decision makers need a pragmatic guide to aid them in understanding the social–ecological system in which they work (e.g., Folke et al. 2005; Collins et al. 2010; Ostrom 2011; Westley et al. 2013).

This chapter introduces several important concepts for realistically conceptualizing problems in large-scale conservation, and it presents a framework for making sense of the human and other dimensions in natural resource management. This framework has been used in diverse contexts and illuminates ways to enhance both sustainability and human dignity (Ascher 2009). Most current large-scale conservation efforts do not attend to these foundational elements. This chapter offers a typology of problems and the view of natural resource management and policy that are used throughout this volume.

2.2 Problem Orientation and a Problem Typology

Problems can only be effectively addressed if people orient to them realistically. As Clark (2008, p. 21) notes, “This seems obvious, but too often we misconstrue a problem, identify the wrong problem, see only part of a problem, or overlook it entirely.” Consequently, one of the major challenges facing practitioners of large-scale conservation is articulating the most relevant problem definition. Practitioners must often contend with facile, yet conventional, problem definitions that can be clearly stated and rigorously solved but are irrelevant to the actual solution. A problem definition may, for example, be highly relevant, but insoluble using old paradigms, professional skills, and institutions. It is common during the early phases of any decision-making process to frame problems rather narrowly, typically in technical terms, and often on the basis of special interests. However, large-scale conservation problems are multifaceted, have wide-ranging effects, and do not lend themselves easily to narrow or technical definitions. A narrow focus on problem solving, rather than a contextually sensitive problem framing, may lead a practitioner to uncritically accept a proposed solution without taking into account past trends and conditions, probable futures, or the value dynamics at play (Rocheport and Cobb 1990; Picard 2010).

Table 2.1 Examples of approaches to large-scale conservation and the three problems encountered in each

Approach	Problem type		
Large-scale conservation approach	Ordinary (technical)	Governance (decision making)	Constitutive (cultural)
Single- and multiple-use management	Calculate maximum sustained yield	Distribute grazing rights among ranchers	Allocate authority to make decisions about land in the public domain
Ecosystem management	Assess trade-offs between species/habitat conservation and extractive uses of resources	Develop habitat conservation plans (HCPs)	Clarify treaty rights of tribes and first nations
Ecoregional planning	Identify wildlife migration corridors	Implement legislation that protects corridors from fragmentation	Restructure traditional/permitted uses of resources by local communities
Trans-boundary management	Map cross-border habitats used by large herbivores and carnivores	Negotiate cross border/international natural resource management agreement	Balance valid and appropriate interests and create an arena for local and cross-border cooperation

We recommend adopting a problem-oriented approach to large-scale conservation that includes five tasks (Clark 2002). The tasks of problem orientation are goal clarification (identifying values sought), trend description (reviewing relevant history), condition analysis (identifying relevant scientific knowledge and data that might explain matters), trend projection into the future, and alternative or solution analysis (including invention, evaluation, and selection of options). All five tasks should be initiated early in the decision-making process and interactively heeded throughout the life of the conservation effort.

A comprehensive problem orientation often reveals three types of problems—technical (ordinary), governance (political), and constitutive (cultural; Clark 2008). Practitioners of large-scale conservation are frequently confronted with all three classes of problems (Table 2.1), although they may or may not recognize this fact. It is easy to misidentify types of problem and consequently pursue ineffective solutions (Box 2.1). Often, these solutions are based on prepackaged disciplinary, bureaucratic, or institutional formulas.

Box 2.1 Three Papers That Describe Complexity and Multidimensionality of Problem Definitions of Large-Scale Conservation Projects

Understanding Patterns of Human Interaction of Decision Making: An Initial Map of Podocarpus National Park, Ecuador (Cherney DN, Bond A, Clark SG, 2009, Understanding patterns of human interaction of decision

making: an initial map of Podocarpus National Park, Ecuador, *J Sustain For* 28:694–711).

Rapid deforestation, poor water quality, rural poverty, and transportation difficulties are just some of the technical problems that participants are focused on in Podocarpus National Park. Underlying these problems, however, is the lack of arenas where people can discuss and balance their competing interests or identify common interest goals. Moreover, the heavy focus on surveillance, planning, and promotion has resulted in a decision-making process that restricts participation to experts and ignores the social context in which the park operates. The authors conclude that understanding the role of deliberative arenas and how deliberately to change the structure and function of those arenas can greatly improve the efficacy of problem solving.

The Promise and Peril of Large-Scale Conservation: An Appraisal of the Selous Niassa Wildlife Corridor (Picard CH, 2010, *The promise and peril of large scale conservation: an appraisal of the Selous Niassa Wildlife Corridor*, Dissertation, Yale University, New Haven).

The Selous Niassa Wildlife Corridor (located on the Tanzanian–Mozambique border) is designed to address two major problems: an increase in wildlife poaching and habitat fragmentation. While these are worrisome trends, they are driven by three conditioning factors that have been overlooked by the current (biophysical) perception of the problem: (1) the historical impact of socialism which profoundly reshaped the physical landscape and continues to influence social and decision process trends in the Corridor today, (2) the rapid transition to a neoliberal free market economy, which created a demand for cash crops, and (3) the sociocultural concept of wilderness, which has deeply influenced participants' expectations and identities, including how problems are defined in the first place.

The American West's Longest Large Mammal Migration: Clarifying and Securing the Common Interest (Cherney DN, Clark SG, 2009, *The American West's longest large mammal migration: clarifying and securing the common interest*, *Policy Sciences* 42(2):95–112).

Participants in the 170-mile pronghorn antelope migration in western Wyoming articulate three distinct problem definitions. The ecological–scientific view advanced by scientists and environmentalists focuses on bottlenecks in the migration route that will cause the antelope to be extirpated locally. The local rights problem advanced by some local residents and property owners suggests that the concerns about the antelope are a guide for environmentalists to lockup public and private lands. The cultural–heritage view advanced by others emphasizes the cultural significance of the migration while rejecting the need for government intervention. The authors argue that underneath each of these problem definitions are governance and constitutive challenges to securing a common interest solution. In particular, the highly fragmented patterns of authority and control and the parochial perspectives of many participants (including scientists) impede resolving the issue satisfactorily.

2.2.1 *Technical Problems*

Technical problems are what most natural resource professionals deal with in their day-to-day work (e.g., what is the estimated population of osprey in the Connecticut River watershed?). Scientific inquiry is typically organized into discrete disciplines that assume the world can be understood by breaking it down into component parts and solutions. The methods associated with disciplinary scientific inquiry are well suited to providing answers to technical problems, especially problems with well-defined spatial, temporal, and other contextual boundaries. However, focusing exclusively on technical problems restricts the range of considerations, participation, and often limits debate to those who have similar language, training, and resources. In contrast, all the chapters in parts II and III focus on the social and decision processes involved in large-scale conservation and move well beyond only technical considerations.

2.2.2 *Governance Problems*

The formal and institutionalized processes represented by government are not necessary for creating the conditions for ordered rule and collective action. The term “governance” has been adopted to refer to “the development of governing styles in which boundaries between and within public and private sectors have become blurred” (Stoker 1998, p. 17). Governance problems arise out of the need to make decisions about policy; however, the institutions and actors involved in governance problems extend beyond the traditional bounds of government and do not necessarily rely on the government’s authority or capacity to get things done. Governance problems deal with both the arenas within which and the processes by which decisions are made, carried out, and appraised.

Moving toward sustainability requires healthy governance processes (Cortner and Moote 1999). Folke et al. (2002, p. 441) found that “adaptive governance systems often self-organize as social networks with teams and actor groups that draw on various knowledge systems and experiences for the development of a common understanding and policies. The emergence of ‘bridging organizations’ seems to lower the costs of collaboration and conflict resolution, and enabling legislation and governmental policies can support self-organization while framing creativity for adaptive co management efforts.” Price-Hall et al. (Chap. 9) recount the development of a bridging organization in northern California.

Unfortunately, adaptive governance systems do not always arise spontaneously. For example, Cherney et al. (Chap. 4) found that fragmented decision arenas in the Connecticut River watershed created a barrier to developing an effective, more comprehensive, common interest conservation management policy. A narrow, localized focus in this case restricted deliberation about local issues at the expense of a holistic vision that could have enhanced system-wide cooperation and outcomes. The problem identified by Cherney et al. is characteristic of the many governance

problems that arise when numerous participants with diverse perspectives are spread out over a large spatial area. Participants may not share the same problem definitions or value outlooks and often lack a practical theory about the social and decision processes of which they are part. The Connecticut River case is a clear example of where participants could better organize for improved governance outcomes.

2.2.3 *Constitutive Problems*

Constitutive problems arise from the norms or cultural rules that guide individual and collective decision making in a community or society. They are implicit and fundamental, yet often difficult to perceive. For example, what should the Tanzanian landscape should look like (wilderness, farmland, pasture), who should have the authority to manage wildlife, and what types of knowledge are necessary for effective decision making? These are constitutive problems that are often overlooked in the current debate about Tanzania's wildlife (Chap. 8). Constitutive norms determine how and why decisions are made and who is involved in the decision-making process; they represent the rules for making the rules about ordinary decision-making interventions. The case studies in this volume suggest that models of large-scale conservation can be improved by being more attentive to constitutive and governance problems.

The implicit norms that underlie governance processes can be adjusted only by changing societal rules through what are commonly described as constitutive processes. Decisions affecting the constitutive process are frequently made unconsciously. The evolving structure of the constitutive decision process is often a result of the way in which a series of ordinary decisions were made, rather than an outcome of an explicit decision about how the overall constitutive process should work. In contrast to technical and governance problems, constitutive problems can be essentially opaque to those within a situation, making such problems difficult to identify, let alone address. Furthermore, few people engaged in large-scale conservation projects are trained to understand constitutive process or identify constitutive problems. As a consequence, constitutive problems are overlooked, misidentified, and rarely addressed.

2.3 A View of Human Behavior

Managing natural resources in pursuit of large-scale conservation requires integrating information into a rational framework or practical theory for decision making. In this volume, the theory and framework that we use to understand the integration task can be most simply stated as “humans seek values through institutions using and affecting resources” (Lasswell 1971, p. 19). The centrality of these four elements—humans, values, institutions, and resources—in policy cannot be overstated. Carrying out large-scale conservation successfully requires understanding

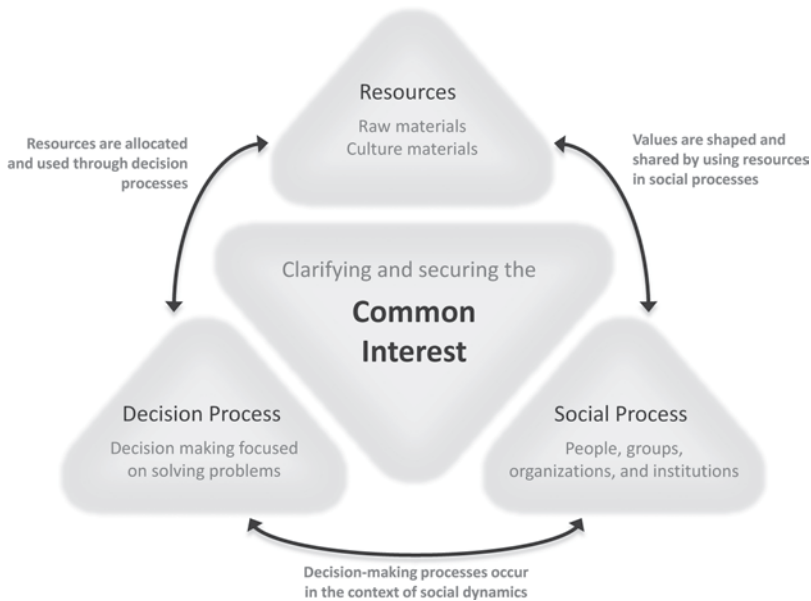


Fig. 2.1 A framework for clarifying, securing, and sustaining the common interest in communities seeking human dignity and environmental sustainability

and improving the way people make decisions about themselves, their values, institutions, and resources. This practical theory is foundational to this volume and informs case studies of this volume.

2.3.1 Humans

All people have perspectives made up of identities, expectations, and demands. Understanding the social process in a large-scale conservation venture requires discerning the motivations of all participants by analyzing their values, perspectives, and actions.

In addition to participants' standpoints, one should be cognizant of the situations (arenas) in which participants interact and the strategies they use to pursue their objectives. If one hopes to achieve outcomes that respect human dignity and are in the common interest, arenas should be open (i.e., relevant stakeholders must be included and allowed adequate participatory opportunities) and transparent (Steelman and DuMond 2009). Furthermore, because common interest actions may result in value deprivations (e.g., loss of respect, wealth, well-being) for some participants, decisions should be made in a situation or an arena that is perceived as legitimate by relevant participants (Fig. 2.1). Lundqvist (2004), for example, suggested that good governance of ecosystems requires solving the trilemma characterized by tensions between effectiveness, participation, and legitimacy.

The goals of participants in any large-scale conservation effort reflect not only their values but also their perceptions, or standpoint. In short, people are “predisposed to complete acts in ways that are perceived to leave them better off than if [they] had completed them differently” (Lasswell 1971, p. 16). Standpoint is the perceptual lens through which an individual views the world. It is a function of personal experience, professional training, and organizational affiliation. Individual experiences inevitably lead to preconceptions and biases that limit our ability to be fully rational. They influence what specific outcomes we value, how and what we perceive to be problems, and what we see as reasonable solutions. Clarifying one’s standpoint requires recognizing one’s own biases, whether they are personal, epistemological, disciplinary, organizational, or parochial. A number of methods can be used to facilitate standpoint clarification. For example, several authors have used the Q-method to illuminate people’s perspectives and to identify common ground in contentious conservation cases (Chamberlain et al. 2012; Mazur and Asah 2013). Standpoint clarification will not ensure complete objectivity, but it can help temper the effects of the biases.

2.3.2 *Values*

Values are “orientations toward what is considered desirable or preferable by social actors” (Zavalloni 1980, p. 74) and are often used as “criteria for preference or choice or as justifications for proposed or actual behavior” (Williams 1970, p. 27). Values are embodied in ethical principles, normative properties, and moral responsibilities of society; they often appear as moral or ethical statements about conduct that is beneficial or necessary for attaining human dignity at the individual, group, and societal level. Values are at the very heart of daily life, individual meaning, and social meaning. Consequently, value dynamics must be understood in order to collectively articulate the common interest.

Although potential values are multitudinous, they can be classified in terms of eight functional values, which represent a comprehensive list of underlying human motivations (Table 2.2). Using this classification scheme permits a more objective study of values and focuses attention on the key role that values play in decision making (Bell 1997). Particular things that are valued or desired (e.g., the presence of wolves in Yellowstone, preservation of cultural landscapes in the Connecticut River valley) can be ascribed to one or more of these values. For example, Picard (Chap. 8) describes how some participants use wildlife in Tanzania to secure the values of wealth, power, and skill, while others seek rectitude in establishing a wilderness devoid of people. All eight values are at play in human interactions. Relative preferences among these values determine the importance placed on specific outcomes. For example, participants might argue about the moral imperative to save an endangered species (rectitude) versus preserving jobs (wealth and well-being).

Four basic types of strategies can be used to obtain desired value outcomes: diplomatic, ideological, economic, and coercive. Diplomatic strategies are used by

Table 2.2 Values that motivate human behavior (Lasswell 1971)

Value	Definition	Analytical questions
Affection	Desire for friendship, loyalty or love	How are professional, friendship, and loyalty values used in decision process? What are the outcomes?
Enlightenment	Desire to give and receive information	How is information given and received? What are the outcomes?
Power	Desire to make and carry out decisions	How is power given and received in interpersonal and decision process? What are the outcomes?
Rectitude	Desire for moral or ethical standards	What ethical considerations are at play in interpersonal relations and in the decision process? What are the outcomes?
Respect	Desire to give and receive recognition within a community	How is respect or deference used in decision process? What are the outcomes?
Skill	Desire to develop talents	What kinds of skills are used in problem orientation and in decision process? How and with what outcomes?
Well-being	Desire for mental, physical, and spiritual health	How is well-being affected by the decision process? What are the outcomes?
Wealth	Desire to control resources (money, land, human capital)	How is wealth used and affected (given and received) by the decision process?

leaders and their representatives to communicate with one another. Ideological or educational strategies offer words, deeds, and other symbols. Economic strategies involve goods and services (incentives and disincentives). And coercive strategies use force and threats of force.

In general, persuasive strategies (diplomatic and ideological) are more likely to be sustainable than coercive strategies. Collaborative management and learning typically combine diplomatic and ideological strategies seeking more sustainable management actions (Fernandez-Gimenez et al. 2008). Well-designed economic strategies can also be powerful (e.g., payments to ranchers for livestock depredations in order to conserve large carnivores). However, coercive strategies have sometimes been clothed in the guise of economic strategies with appeals to economic efficiency and rationality (e.g., the expropriation of customary use rights for “the public good,” or the fines and fences approach to park management).

2.3.3 Institutions

Improving large-scale conservation requires not only changing the way decisions are made and the content of those decisions, but also changing the constitutive factors that influence how we perceive of and think and feel about large-scale conservation problems. Conventional appraisals of decision making usually fail to examine both the decision-making process and the decision-making culture comprehensively. A functional appraisal of the decision process requires analyzing all

Table 2.3 An overview of decision functions and examples (Lasswell 1971)

Function	Definition	Examples	
		Legal proceeding	Timber management
Intelligence (planning)	Gathering information about the problem	Congressional hearings	Cruise, market analysis
Promotion (open debate)	Weighing and recommending alternatives	Debates	Forest planning process/workshop
Prescription (selection)	Authoritative decision about what to do	Legislation	Management plan
Invocation (enforcement)	Preliminary effort to put a prescription into effect	Filing a legal case	Putting a sale up for bids
Application (implementation)	Final interpretation of the decision in practice	Court decisions	Harvest and receipt proceeds
Appraisal (evaluation)	Comparing goals and performance of the decision	Congressional Budget Office review	Post-harvest survey, annual accounts
Termination (conclusion)	Decision to end a prescription	Repeal or significant amendment of legislation	Revision of management plan

the specific functions (activities) that must be completed in order to move toward a preferred future. A complete decision process requires attending to seven decision functions (Table 2.3). Standards exist for evaluating the efficacy of each function. The decision process as a whole should be dependable, comprehensive, and integrative, and focused on common interests (Clark 2002). Although the functions can be carried out either sequentially or concurrently, it is important to attend to all seven functions since ignoring any one can lead to suboptimal outcomes. For example, plans end up sitting on the shelf when the prescription and application functions are not considered in tandem.

Adequate appraisal of large-scale conservation initiatives as part of any decision-making process is especially important. Particular initiatives can be treated as practice-based prototypes or innovations. As these prototypes are applied, they should be monitored and evaluated in order to identify what works, why, and under what circumstances. Adequate appraisal requires (1) determining whether an effort met its goals, (2) identifying shortfalls and accomplishments, (3) analyzing the causal factors behind the level of success of the effort, and (4) making recommendations on how future efforts can be made more effective. Being clear on evaluative standards is essential to close feedback loops and actively learn at individual, organizational, and policy levels. Rigorous appraisal of prototypes will facilitate identifying best practices, diffusing those lessons widely, and adapting the lessons to new contexts. Appraisal of large-scale conservation initiatives should also indicate whether the project passes the three tests of the common interest (Chap. 1).

Institutions develop when habitual actions that were initially undertaken for pragmatic reasons take on a normative force (Berger and Thomas 1966; Ostrom 2005). Institutionalization allows us to construct our social reality. Institutions not only control behavior by dictating what actions are acceptable but they also free us to make decisions by letting us know what another's actions are supposed to mean. People take part in institutional cultures, which mediate how resource management decisions are made. According to Schein (1990, p. 111), "Culture can now be defined as (a) a pattern of basic assumptions, (b) invented, discovered or developed by a given group, (c) as it learns to cope with its problems of external adaptation and internal integration, (d) that has worked well enough to be considered valid and, therefore (e) is taught to new members as the (f) correct way to perceive, think, and feel in relation to those problems."

All people are part of cultures and subscribe to basic belief systems, or myths, about how the world works (May 1991; Patai 1972). Myths are not right or wrong per se, but some myths are more useful in a given context than others (Brown 2001; Cherney et al. 2009). Within disciplinary cultures, myths are embodied in scientific paradigms (Kuhn 1970) and mental models (Senge 1990). Often epistemic communities develop around particular suites of issues, and members of these communities play an important role in framing issues for debate, articulating causal relationships, proposing alternatives, and identifying negotiable elements (Haas 1992; Raymond et al. 2013). Over time, epistemic communities can develop distinct institutionalized cultures with their own sets of myths. Cultures have begun to develop around different approaches to large-scale conservation. Each approach is associated with a package of ideas, methods, and underlying philosophies that guide practitioners as they make judgments and carry out conservation interventions.

Myths can be defined in terms of doctrine, formula, and symbols. Although large-scale conservation approaches have different origins and have been developed in different contexts, they all have been developed as part of an ongoing adaptive process. Consequently, while there are variations in the doctrine, formula, and symbols employed by different approaches, there are also areas of similarity. Doctrine is a set of basic assumptions or philosophy that underlie an approach. Doctrine includes, for example, assumptions about the appropriate relation between humans and nature, the inherent value of biodiversity, and ecological and social paradigms. Formula is the set of operating principles that guide practices on the ground. The goals sought, the appropriate target of intervention, the acceptable methods, the degree of social and disciplinary integration, how decisions should be made, and who should make them are all defined by an approach's formula. Symbols are used to promote and legitimize the approach. GIS maps, charismatic megafauna, and even "fences and fines" take on symbolic import as practitioners seek to promote, justify, and defend proposed interventions. Symbols, such as grizzly bears and wolves in the American West, are sometimes manipulated to convey implicit but very specific messages to a broad public audience. It is precisely because most doctrines, formulas, and symbols (e.g., myths) are seldom made explicit that they often go unchanged, even in the face of public demands to do so.

2.3.4 *Resources*

Ecosystems are the basic resource unit of large-scale conservation. As was noted in Chap. 1, ecosystems are being degraded and destroyed at unprecedented rates worldwide because of a complex mix of direct and indirect human activities. All living things depend on healthy ecosystems to provide life-sustaining services. Consequently, destruction of native ecosystems is expected to have harmful and long-lasting effects for all species, including humans. Avoiding or ameliorating harmful effects requires maintaining ecosystem structures, processes, and resiliency (Walker et al. 2004).

In addition to ecosystems as a whole, large-scale conservation efforts are also intended to conserve ecosystem processes and functions. Large-scale conservation projects may address concerns about preserving specific ecosystem services such as carbon sequestration potential, water quality and quantity, and fisheries. Additionally, attention is being paid to issues of spatial and temporal scale. For example, forest managers are now designating relatively young stands of trees for protection in order to provide old-growth habitat in the future, and protected areas are being designed with climate change in mind. Although large-scale conservation efforts may eschew species-specific interventions, charismatic megafauna, rare and endangered species, and old growth habitat still top the list of conservation priorities for donor organizations and individuals. It is often assumed that large-scale efforts will benefit these individual ecosystem elements.

Sustainability is often depicted as a Venn diagram in which social, economic, and environmental domains partially overlap. This picture suggests that ecosystems interact with social systems. It is an improvement on the framework that places man and nature in separate conceptual domains (Folke et al. 2002). However, it does not go far enough since the boundary between social and ecological systems is actually an artificial construct. The use of the term social–ecological system helps to emphasize that social systems do not merely interact with ecosystems; they are the context within which ecosystems are embedded, and vice versa (Berkes and Folke 1998). Yet, we contend that it does not go far enough to conceptualize realistically the actual “singularity” of natural and human systems. Today even the most “natural” of areas in the USA (e.g., wilderness areas) reflect human values and management decisions and, consequently, are socially constructed. The line that separates wilderness from nonwilderness is primarily a management boundary on a map, not a natural feature of the ecosystem. Advances in large-scale conservation will be more rapid when we start using a framework in which ecosystems are seen as fully integrated with social systems. Consequently, in addition to ecosystems and the biophysical elements of ecosystems, we must be attuned to the human resources that we are also striving to conserve. These include sustainable natural resource-based industries and economies (e.g., fishing, ranching, forestry), cultural resources (e.g., opportunities for aesthetic and spiritual renewal), and social capital.

2.4 Conclusion

Large-scale conservation in the common interest requires that people be clear about the nature of the problems they face, the utility of the theory they employ, and the features of the situation that they attend to and try to manage. To better ground our large-scale conservation work, we offer a typology of problems and a practical theory to guide practitioners who wish to enhance sustainability and human dignity in the common interest. The problem typology distinguishes between ordinary, governance, and constitutive problems. Too often, governance and constitutive problems are overlooked or misconstrued. The theory we present is grounded in the observation that “humans seek values through institutions that use and affect resources.” All four elements—humans, values, institutions, and resources—are open for empirical, systematic study. Skillful application of this theory enables practitioners to analyze the full suite of problems and develop realistic solutions. This problem typology and theory can significantly aid practitioners in achieving large-sale conservation in the common interest.

References

- Ascher W (2009) *Bringing in the future: strategies for farsightedness and sustainability in developing countries*. University of Chicago Press, Chicago
- Bell W (1997) *Foundations of future studies: human science for a new era*. Transaction, New Brunswick
- Berger PL, Thomas L (1966) *The social construction of reality: a treatise in the sociology of knowledge*. Doubleday, Garden City
- Berkes F, Folke C (eds) (1998) *Linking social and ecological systems: management practices and social mechanisms for building resilience*. Cambridge University Press, Cambridge
- Brown JS (2001) Ngongas and ecology: on having a worldview. *Oikos* 94(1):6–16
- Chamberlain EC, Rutherford MB, Gibeau ML (2012) Human perspectives and conservation of grizzly bears in Banff National Park, Canada. *Conserv Biol* 26(3):420–431
- Cherney DN, Bond A, Clark S (2009) Understanding patterns of human interaction of decision making: an initial map of Podocarpus National Park, Ecuador. *J Sustain For* 28(6/7):694–711
- Clark S (2002) *The policy process: a practical guide for natural resource professionals*. Yale University Press, New Haven
- Clark S (2008) *Ensuring greater Yellowstone’s future: choices for leaders and citizens*. Yale University Press, New Haven
- Clark SG, Wallace RL (2013) Interdisciplinary environmental leadership: learning and teaching integrated problem solving. In: Gallagher DR (ed) *Environmental leadership: a reference handbook*. Sage, Thousand Oaks, pp 420–429
- Collins SL, Carpenter SR, Swinton SM, Orenstein DE, Childers DL, Gragson TL, Grimm NB et al (2010) An integrated conceptual framework for long-term social–ecological research. *Front Ecol Environ* 9(6):351–357
- Cortner H, Moote MA (1999) *The politics of ecosystem management*. Island Press, Washington
- Fernandez-Gimenez ME, Ballard HL, Sturtevant VE (2008) Adaptive management and social learning in collaborative and community-based monitoring: a study of five community-based forestry organizations in the western USA. *Ecol Soc* 13(2):4. <http://www.ecologyandsociety.org/vol13/iss2/art4/>

- Folke C, Carpenter S, Elmqvist T, Gunderson L, Holling CS, Walker B (2002) Resilience and sustainable development: building adaptive capacity in a world of transformations. *Ambio* 31(5):437–440
- Folke C, Hahn T, Olsson P, Norberg J (2005) Adaptive governance of social-ecological systems. *Annu Rev Environ Resour* 30:441–473
- Haas PM (1992) Epistemic communities and international policy coordination: introduction. *Int Organ* 46(1):1–35
- Kuhn TS (1970) *The structure of scientific revolutions*, 2nd edn. University of Chicago Press, Chicago
- Lasswell HD (1971) *A pre-view of policy sciences*. American Elsevier, New York
- Lundqvist LJ (2004) Integrating Swedish water resource management: a multi-level governance trilemma. *Local Environ* 9(5):413–424
- May R (1991) *The cry for myth*, 1st edn. Norton, New York
- Mazur KE, Asah S (2013) Clarifying standpoints in the gray wolf recovery conflict: procuring management and policy forethought. *Biol Conserv* 167:79–89
- Ostrom E (2005) *Understanding institutional diversity*. Princeton University Press, Princeton
- Ostrom E (2011) Background on the institutional analysis and development framework. *Policy Stud J* 39(1):7–27
- Patai R (1972) *Myth and modern man*. Prentice-Hall, Englewood Cliffs
- Picard C (2010) *The promise and peril of large-scale conservation: an appraisal of the Selous Niassa Wildlife Corridor*. Dissertation, Yale University
- Raymond CM, Singh GG, Benessaiah K, Bernhardt JR, Levine J, Nelson H, Turner NJ, Norton B, Tam J, Chan KMA (2013) Ecosystem services and beyond: using multiple metaphors to understand human-environment relationships. *BioScience* 63(7):536–546
- Rocheport DA, Cobb RW (1990) *Problem definition: an emerging perspective*. University Press of Kansas, Lawrence
- Schein EH (1990) Organizational culture. *Am Psychol* 45(2):109–119
- Senge P (1990) *The fifth discipline*. Doubleday, New York
- Steelman TA, DuMond ME (2009) Serving the common interest in US forest policy: a case study of the Healthy Forests Restoration Act. *Environ Manage* 43(3):396–410
- Stoker G (1998) Governance as theory: five propositions. *Int Soc Sci J* 50(155):17–28
- Walker B, Holling CS, Carpenter SR, Kinzig A (2004) Resilience, adaptability and transformability in social-ecological systems. *Ecol Soc* 9(2):5. <http://www.ecologyandsociety.org/vol9/iss2/art5>.
- Westley FR, Tjornbo O, Schultz L, Olsson P, Folke C, Crona B, Bodin O (2013) A theory of transformative agency in linked social-ecological systems. *Ecol Soc* 18(3):1–16. doi:10.5751/ES-05072-180327
- Williams RM Jr (1970) *American society*. Knopf, New York
- Zavalloni M (1980) Values. In: Triandis HC, Brislin RW (eds) *Social psychology. Handbook of cross-cultural psychology*, vol 5. Allyn and Bacon, Boston

Large-Scale Conservation in the Common Interest

Clark, S.G.; Hohl, A.M.; Picard, C.H.; Thomas, E. (Eds.)

2015, XIV, 191 p. 8 illus., Hardcover

ISBN: 978-3-319-07418-4